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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/786,609

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EXAMINER

NGUYEN, JENNIFER T

ART UNIT

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2629

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/786,609	Applicant(s) NAKANO ET AL.	
	Examiner Jennifer T. Nguyen	Art Unit 2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 May 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This Office action is responsive to amendment filed 5/17/07.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ino et al. (Patent No. US 6,424,328) in view of Shiba et al. (Patent No.: US 6,075,505).

Regarding claims 1, 6, and 8, Ino teaches comprising: a plurality of pixel formation portions for forming an image to be displayed (fig. 2);

a plurality of video signal lines (12-1..., fig. 1) for transmitting a plurality of video signals representing the image to the plurality of pixel formation portions (col. 4, lines 35-57);

a video signal line driving circuit (14, fig. 1) that has a plurality of output terminals respectively corresponding to a plurality of video signal line groups made by grouping the plurality of video signal lines into groups of two or more video signal lines, for outputting, by time division, from each of the output terminals the video signals to be transmitted by the video signal line group corresponding to that output terminal (col. 4, lines 58-67); and

a connection switching circuit (time-division switch section 16, fig. 1) for connecting each of the output terminals of the video signal line driving circuit to one of the video signal lines in the corresponding video signal line group, and switching the video signal line to which

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each of the output terminals is connected within the corresponding video signal line group in accordance with said time division (col. 5, lines 1-8);

wherein each of the plurality of video signal line groups is made of a plurality of video signal lines that are spaced apart by an odd number, of video signal lines (i.e., 12-1 and 12-3 are spaced apart by 12-2, fig. 1).

Ino differs from claims 1, 6, and 8 in that he does not specifically teach that the first and second video signal lines of a given group are spaced apart from one another by at least one video signal line of a different group.

Shiba teaches a first and a second video signal lines of a given group (S1) are spaced apart from one another by at least one video signal line of a different group (S2) (fig. 14, col. 7, lines 52-54). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the video signal line groups as taught by Shiba in the system of Ino in order to provide a display with a reduced number of driver circuits for signal lines whilst obtaining an improved display quality.

Regarding claim 2, Ino further teaches a plurality of scanning signal lines (11-1, 11-2..., fig. 1) intersecting with the plurality of video signal lines (12-, 12-2...); and

a scanning signal line driving circuit (13) for respectively applying to the plurality of scanning signal lines a plurality of scanning signals for selectively driving the plurality of scanning signal lines;

wherein the plurality of pixel formation portions (20, fig. 2) are arranged in a matrix, in correspondence to the intersections between the plurality of video signal lines and the plurality of scanning signal lines;

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wherein each of the pixel formation portions (20) comprises:

a switching element (21) that is turned on and off by a scanning signal applied by the scanning signal line driving circuit to the scanning signal line passing through the corresponding intersection;

a pixel electrode (21, fig. 2) connected via the switching element to the video signal line that passes through the corresponding intersection; and

an opposing electrode (23) that is shared by the plurality of pixel formation portions, and that is disposed such that a predetermined capacitance is formed between the opposing electrode and the pixel electrode (col. 5, lines 9-40);

wherein the connection switching circuit connects, by time division, each of the output terminals of the video signal line driving circuit to the video signal lines within the corresponding video signal line group from the time when one scanning signal line is selected by the scanning signal line driving circuit and until another scanning signal line is selected (col. 3, lines 21-29).

Regarding claim 3, Ino teaches the connection switching circuit changes a switching order of the video signal lines to be connected to each of the output terminals of the video signal line driving circuit in accordance with a switching of the scanning signal line selected by the scanning signal line driving circuit (col. 6, line 63 to col. 7, line 3).

Regarding claim 4, Ino teaches every time the scanning signal line selected by the scanning signal line driving circuit is switched for a predetermined number of times of two or greater, the video signal line driving circuit inverts a voltage polarity of the video signal

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outputted from each of the output terminals, taking the opposing electrode as reference potential (col. 4, lines 58-67).

Regarding claims 5, 7, and 11, Ino teaches the video signal line driving circuit outputs the plurality of the video signals such that voltages of different polarities are applied to neighboring video signal lines of the plurality of video signal lines (col. 4, lines 58-67).

Regarding claim 10, Ino teaches a switching order of the video signal lines to be connected to each of the output terminals of the video signal line driving circuit is changed in accordance with a switching of the scanning signal line selected in the scanning signal line driving step (col. 4, lines 58-67).

Regarding claims 12-14, Ino teaches two switches (end of 12-1 and 12-3) are provided between each video line in a given one of the groups (i.e., 15-1, 15-2...) (col. 5, lines 1-8).

4. Claims 1, 6, and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ino et al. (Patent No. US 6,424,328) in view of Hebiguchi et al. (Patent No.: US 6,707,441).

Regarding claims 1, 6, and 8, Ino teaches comprising: a plurality of pixel formation portions for forming an image to be displayed (fig. 2);

a plurality of video signal lines (12-1..., fig. 1) for transmitting a plurality of video signals representing the image to the plurality of pixel formation portions (col. 4, lines 35-57);

a video signal line driving circuit (14, fig. 1) that has a plurality of output terminals respectively corresponding to a plurality of video signal line groups made by grouping the plurality of video signal lines into groups of two or more video signal lines, for outputting, by time division, from each of the output terminals the video signals to be transmitted by the video signal line group corresponding to that output terminal (col. 4, lines 58-67); and

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a connection switching circuit (time-division switch section 16, fig. 1) for connecting each of the output terminals of the video signal line driving circuit to one of the video signal lines in the corresponding video signal line group, and switching the video signal line to which each of the output terminals is connected within the corresponding video signal line group in accordance with said time division (col. 5, lines 1-8);

wherein each of the plurality of video signal line groups is made of a plurality of video signal lines that are spaced apart by an odd number, of video signal lines (i.e., 12-1 and 12-3 are spaced apart by 12-2, fig. 1).

Ino differs from claims 1, 6, and 8 in that he does not specifically teach that the first and second video signal lines of a given group are spaced apart from one another by at least one video signal line of a different group.

Hebiguchi teaches a first and a second video signal lines (D_{i1} and D_{i2}) of a given group (D_i) are spaced apart from one another by at least one video signal line (D_{i+1a}) of a different group (D_{i+1}) (fig. 15, col. 15, lines 36-67). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the video signal line groups as taught by Hebiguchi in the system of Ino in order to reduce cross-talk, therefore display quality is improved.

5. Applicant's arguments with respect to claims 1-14 have been considered but are moot in view of the new ground(s) of rejection.

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer T. Nguyen whose telephone number is 571-272-7696. The examiner can normally be reached on Mon-Fri: 9:00am-5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Hjerpe can be reached on 571-272-7691. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR

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system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jennifer Nguyen
1/13/07

A handwritten signature in black ink, appearing to read 'R. Hjerpe', with a stylized, cursive script.

RICHARD HJERPE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600